U.S. Department of Energy
Grand Junction Office
February 1999

Explanation of Significant Difference

Introduction

The U.S. Department of Energy (DOE) has prepared this Explanation of Significant Difference (ESD) to provide the rationale for the application of supplemental standards to certain properties in the Monticello Vicinity Properties (MVP) Site and the Monticello Mill Tailings Site (MMTS). The supplemental standards establish alternate cleanup levels for soil contaminated with uranium mill tailings and uranium ore based on an evaluation of risk for specific exposure scenarios. The supplemental standards associated with the MVP Site will be applied to city of Monticello streets and utility rights-of-way, along State highway rights-of-way within the Monticello city limits, and on a privately owned property with dense piñon and juniper stands. Supplemental standards associated with the MMTS Peripheral Properties in Operable Unit II will be applied to densely vegetated hillsides south of Montezuma Creek and the millsite. Supplemental standards are also being implemented for soils and sediments in Montezuma Creek wetlands and riparian areas from approximately 0.4 mile to 1.8 miles east of the millsite (Operable Unit III).

Summary of Site History, Contamination Problems, and Selected Remedy

The original Monticello mill was built in 1942 to provide an additional supply of vanadium during World War II. The mill was modified in the early 1950s to process uranium. Milling continued intermittently until the early 1960s when the mill was dismantled.

Tailings are the sand-like material that remains after processing. Uranium tailings contain naturally occurring materials that radioactively decay to radium and then to radon, a radioactive gas. Tailings and ore contaminated properties in and around the city of Monticello. Tailings were dispersed by wind from the millsite and residual ore remained from hauling and stockpiling operations.

The U.S. Department of Energy entered into an agreement with the U.S. Environmental Protection Agency (EPA) and the State of Utah Department of Environmental Quality (UDEQ) to clean up tailings under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The cleanup must also comply with applicable or relevant and appropriate Federal, State, and local environmental laws and regulations.

In November 1989, a Record of Decision (ROD) for the MVP Site was signed. The ROD is the CERCLA document that explains the rationale for selecting a particular cleanup method or remedy. The ROD established the preferred remedy as removal of contaminated material from the MVP Site to below 5 picocuries per gram (pCi/g) in the surface 6 inches of soil or below 15 pCi/g in successively deeper 6-inch layers. These standards are established in Title 40 of the *Code of Federal Regulations* Part 192 (40 CFR 192). The use of supplemental standards, as allowed by 40 CFR 192, was not proposed in the MVP Site ROD.

In September 1990, a Record of Decision (ROD) for the MMTS was signed. The ROD established that supplemental standards could be applied to the densely vegetated hillsides south of Montezuma Creek and that institutional controls could be used to restrict access and to control the use of the land to limit future exposure.

The MMTS ROD established that the soils and sediments adjacent to Montezuma Creek would be remediated to the standards specified in 40 CFR 192.

40 CFR Parts 192.21 and 192.22 allow for supplemental standards under certain circumstances, i.e., when remedial actions to satisfy the cleanup standards for land would directly produce environmental harm that is clearly excessive compared to the health benefits from remediation or the cost of remedial action is unreasonably high relative to long-term benefits.

Since the issuance of the MVP Site and the MMTS RODs, DOE, EPA and UDEQ have determined that the application of supplemental standards would provide for a more cost-effective and environmentally protective remedy for remediation of certain areas of the sites. This ESD was developed to provide the rationale for proposing supplemental standards.

Description of Supplemental Standards and the Basis for Application

Monticello Vicinity Properties Site

Monticello City Streets and Utilities/Highway 191 and 666 Rights-of-Way. Contamination exceeding the 5 pCi/g and 15 pCi/g standards remains in city of Monticello rights-of-way associated with streets and utilities, in the Highway 191 embankment just west of the millsite, and potentially in other State highway rights-of-way within the Monticello city limits.

Privately Owned Piñon/Juniper Property. On a privately owned property in the city of Monticello, contamination exceeding the 5 pCi/g and 15 pCi/g standards remains in a dense piñon/juniper stand.

DOE proposed supplemental standards on the State highways, city streets, and utility rights-of-way in the city of Monticello because costs associated with remediation and disruption of street and highway operations exceed the health benefits associated with removal of contamination. The recommendation to apply supplemental standards to these rights-of-way is supported by a human-health risk assessment that considers periodic maintenance worker and construction worker exposure scenarios. Evaluation of the identified potential risks presented to these workers falls within regulatory ranges of acceptability. Institutional controls will be implemented to prevent use of these rights-of-way for anything other than their current use. Additionally, through a Cooperative Agreement with the city of Monticello, DOE will manage and dispose of contaminated material excavated from rights-of-way in the future.

Supplemental standards were proposed on the privately owned piñon/juniper property because of the owner's desire to maintain the stand of mature piñon and juniper trees and native vegetation currently on the property. Remediating the property to the 40 CFR 192 standards could result in the potential loss of wildlife habitat, native flora, and topsoil. Additionally, erosional problems and excessive costs from a full cleanup can be avoided through the application of supplemental standards.

The health risk was assessed for residential, residential backyard, extended backyard, and visitor exposure scenarios. The health risks were determined to be acceptable with these future residential land-use scenarios if the property was remediated to 40 CFR 192 standards in all areas that exceeded 16 pCi/g and in a residential building footprint. Institutional controls will be implemented to ensure that all future residential development footprints meet the 40 CFR 192 standards.

Monticello Mill Tailings Site

DOE-Owned Densely Vegetated Hillsides South of Montezuma Creek (Operable Unit II). As in the case of the privately owned piñon/juniper property, supplemental standards were proposed to maintain the stand of mature piñon and juniper trees and native vegetation currently on the properties. The application of supplemental standards in lieu of complete remediation will reduce the impact to wildlife habitat, native flora, and topsoil. Additionally, the high cost of the extensive remedial effort to remove contamination that currently poses a minimal health risk will be avoided. The health risks were assessed for extended backyard and visitor exposure scenarios and were determined to be acceptable with these future land-use scenarios if the property was remediated to 40 CFR 192 standards in all areas that exceeded 32 pCi/g at the surface.

DOE plans to transfer ownership of the properties to the city of Monticello; the land will be designated open space and made available to the public in perpetuity. Use of these properties will be restricted to ensure that no habitable structures may ever be built on them. Therefore, evaluation of residential or residential backyard exposure scenarios was not applicable. Institutional controls, including restrictive easements, will be implemented to ensure that there is no residential development on the properties.

Montezuma Creek Canyon

DOE is proposing to apply supplemental standards to the contaminated soils and sediments in wetlands and riparian areas adjacent to Montezuma Creek from approximately 0.4 mile east of the millsite to 1.8 miles east of the millsite. The radiologically contaminated soils occur in a narrow band following the path of Montezuma Creek and are generally less than 24 inches deep.

A partial removal of contaminated soils was completed in January 1999. Institutional controls, including restrictive easements, will be applied to limit development within the floodplain and riparian areas, thereby limiting future exposure.

A human health risk assessment was conducted to evaluate the radiological dose from external radiation plus inhalation and ingestion of radioactive substances. With the partial removal of contaminated soils in conjunction with institutional controls, the risks from radioactive substances are within the EPA acceptable risk range of 1×10^{-4} to 1×10^{-6} added cancer risks.

Affirmation of Statutory Determinations

In accordance with 40 CFR Parts 192.21 and 192.22, application of supplemental standards allows the development of alternate cleanup levels based on an assessment of risk to human health and the environment for specific exposure scenarios. Supplemental standards may be allowed where removal would cause undue environmental damage or would result in excessive remedial action costs compared to any health benefits achieved by reduction in risk.

DOE has made the determination that the application of supplemental standards on the properties specified herein is protective of human health and the environment. Review of the application of supplemental standards to make certain that they remain protective will be ensured through the implementation of long-term surveillance and monitoring. DOE will also conduct 5-year reviews pursuant to CERCLA.

Public Participation Activities

DOE will publish a Notice of Availability and a brief description of this ESD in the San Juan County, Utah, newspapers. A press release will also be issued to San Juan County news media. The ESD is available to the public in the Administrative Record file and Information Repository. DOE encourages residents to visit the Monticello city offices, where the Administrative Record is located during the hours of 8:30 a.m. until 4:30 p.m. Monday through Friday and 6:00 to 8:00 p.m. on Tuesday and Wednesday evenings. The ESD will also be mailed to individuals on the Utah key contacts mailing list. DOE will accept comments on the ESD from the date of the Notice of Availability. DOE will provide responses to any comments received.

A public meeting will be held on March 18, 1999, in the Monticello High School Auditorium from 7:00 to 9:00 p.m.